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INDEX TO THE TRANSACTIONS
OF THE
ROYAL SOCIETY OF EDINBURGH
1889—1908.

TRANSACTIONS
OF THE
ROYAL SOCIETY OF EDINBURGH

GENERAL INDEX
TO
VOLUMES XXXV—XLVI (1889-1908)

WITH
*AN ADDRESS BY SIR WM. TURNER, K.C.B., THE PRESIDENT, DELIVERED AT
THE OPENING OF THE NEW ROOMS OF THE SOCIETY, 8TH NOVEMBER 1909
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&c., &c.*

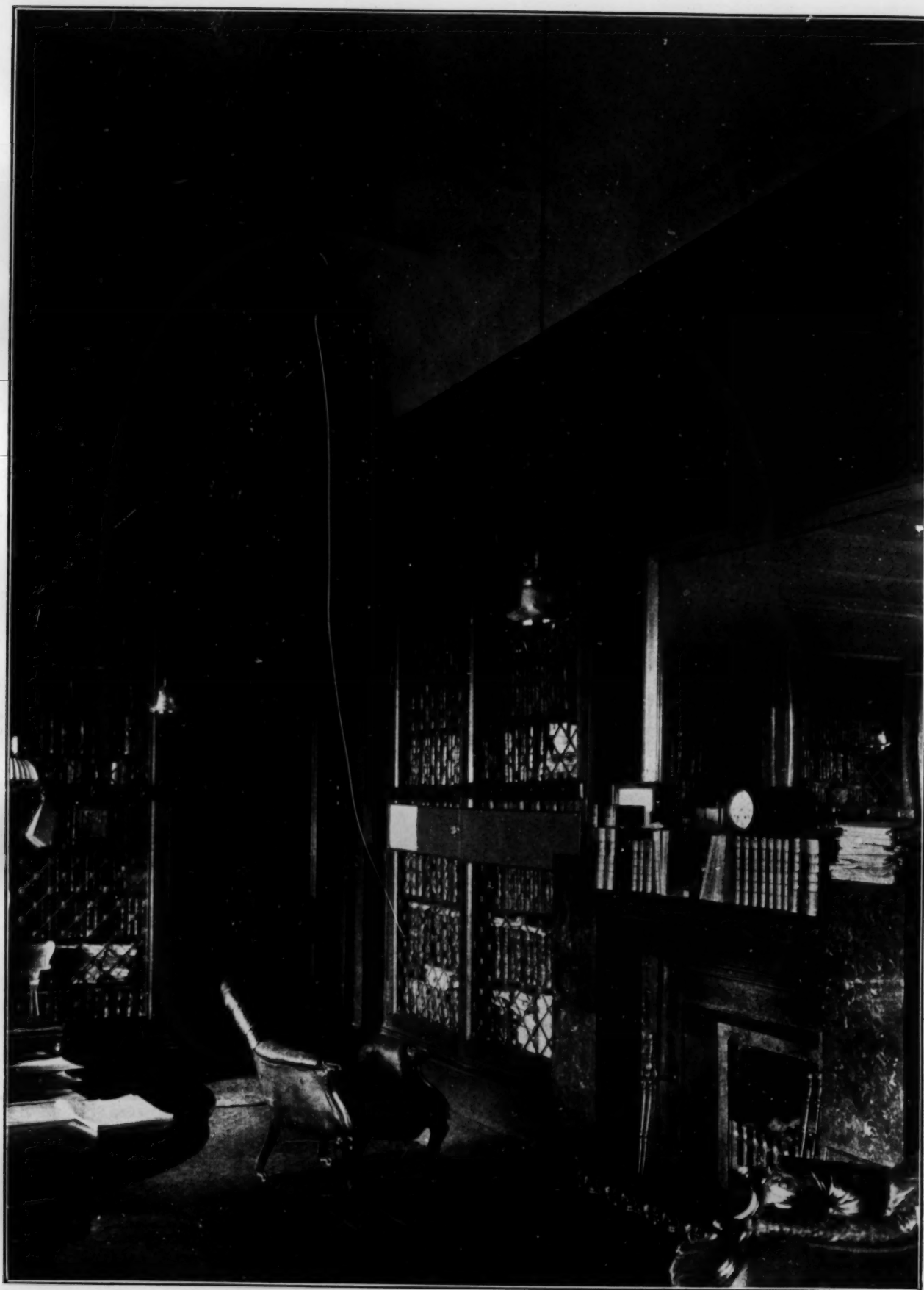
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1910

*In memory of the occupation of Rooms in the Royal Institution,
the Council of the Royal Society have arranged for the
reproauction of photographic plates of the apartments which had
been devoted to their use during the greater part of a century.*

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ROYAL SOCIETY'S APARTMENTS, ROYAL INSTITUTION, EDINBURGH.
PORTION OF THE READING-ROOM.



The Royal Society of Edinburgh

A D D R E S S

ON THE OCCASION OF

THE OPENING OF THE NEW HOME OF THE SOCIETY, 8th November 1909,

BY

SIR WM. TURNER, K.C.B., D.C.L., LL.D., D.Sc., M.B., F.R.S.,

PRESIDENT OF THE SOCIETY

I CANNOT take the Chair, on this my formal appearance as your President, without expressing to the Council of the Society my deep sense of the importance of the trust imposed on me in being nominated for the office, and to the Society itself for the great honour it has conferred in electing me to the Chair. I am the more sensible of the responsibility which I have incurred, when I recall that I succeed Lord KELVIN, whose place was in the highest rank of men of science throughout the world. The numerous memoirs, theoretical and experimental, distinguished by originality of thought in all the branches of science which Lord KELVIN had made his own, communicated during a long series of years to the *Proceedings* and *Transactions* of this Society, have contributed to give to our publications a lasting place in scientific literature. The part which Lord KELVIN took as an original investigator in and expositor of the Philosophy of Nature has been so admirably elucidated in various addresses and obituary notices written by those who were much more competent than I am to determine their character and import: his personality as a great and good man has been referred to with so much feeling in the tribute to his memory made to this Society in January 1908, shortly after his death, by his old friend, our colleague, Professor CRUM BROWN,—that I am sensible it would be superfluous for me to dwell on these aspects of his character and career. I would ask the Fellows of the Society, with the memory of this great leader in science as my predecessor, to forgive my deficiencies. May I assure them that,

with such strength as remains, I shall do what in me lies to promote the welfare of the Society? I cannot, however, conceal from myself that, with the notable exception of Professor CAMPBELL FRASER, who joined the Society in 1858, I am, as regards date of election, senior on the roll of the Society, for I became a Fellow in February 1861. In the following month my old friend and colleague Sir ARCHIBALD GEIKIE, K.C.B., who was chosen last St Andrew's Day to be President of the Royal Society of London, also received the Fellowship.

Our meeting to-day, gentlemen, celebrates a much more important step in the history of the Society than the induction of a new President, for we inaugurate the building destined to be the home of the Society for many years to come. To most of us, especially to the older members, there cannot but be a strong feeling of regret that we have had to leave the suite of rooms which the Society had occupied for eighty-three years (1826-1909) in the Royal Institution, the monumental building at the foot of the Mound, in the heart of the street which we love to regard as one of the most picturesque in this or any other metropolitan city. Though in our tenure of those apartments we were only tenants, paying rent to a Department of the State, and liable to be disturbed in our occupancy on two years' notice, we had remained in undisturbed possession for so long a period that the possibility of being required to quit had scarcely entered our minds, and, when this was mooted, the proposal was received with surprise not unmixed with indignation. Our rooms were associated with the memories of many great men distinguished in science and in letters, who had contributed through their writings to the progress of knowledge and to the service of mankind.

We had indeed been aware that those interested in the development of Art in Scotland had for some time made strenuous efforts to acquire more accommodation for the proper display of the permanent collection of works of Art in the National Gallery, and for the purposes of the Royal Scottish Academy. Various proposals had been made to carry out this object, but no practical solution seemed to have been arrived at, until Mr JOHN SINCLAIR (now Lord PENTLAND), the Secretary for Scotland, introduced in 1906 into the House of Commons, the National Galleries of Scotland Bill, in which it was provided that the Royal Institution, so long the home of the Society, should become one of the National Galleries of Scotland and be applied to the promotion of the Fine Arts. As it soon became obvious that the Government intended to press the Bill through Parliament, the Council and the Fellows generally were called upon, in view of the intended compulsory removal of the Society, very seriously to consider the question of obtaining adequate accommodation for their meetings, for the valuable Library of more than thirty thousand volumes, for their pictures, manuscripts, and other properties, and for the transaction generally of the business of the Society. Negotiations were entered into with the Secretary for Scotland, who received a deputation of the Fellows of the Society, headed by the venerable President, Lord KELVIN, and supported by a large body of Scottish Members of Parliament irrespective of party. The claims of the Society for a continuance of support from the State, by reason of its

representative character, and of the scientific work which had been discharged by its Fellows, were urged on the Scottish Secretary, and were admitted by him as constituting definite title to the receipt of public funds for this purpose. As a result of the interview, a clause was introduced into the Bill making it lawful for the Secretary for Scotland to allocate, *inter alia*, sums “(b) For the purchase, erection, and equipment of buildings, and for the purchase of any land necessary in connection therewith, to be invested in the Commissioners of Works, and to be used for the purposes of the Royal Society of Edinburgh, until otherwise prescribed, with the consent of the Treasury.”

The money required for the purchase of the building now in our possession, and for its adaptation to the express objects of the Society, was promised by the Treasury, and the Bill became law on December 21st, 1906. It is due to Lord PENTLAND that we should record our sense of his courtesy at our interviews with him, as well as our hearty thanks for the effective advocacy of our claim to obtain the requisite funds from the Treasury, both for the purchase and equipment of our habitation and for an annual grant of £600 to assist in the discharge of our scientific work. We are now, therefore, no longer tenants-at-will of apartments, to be dispossessed on short notice ; we sit rent free in a handsome and commodious building, and with our occupancy ensured by a Parliamentary title. We have a lecture theatre equipped with modern appliances for the illustration of the subjects from time to time discussed at our meetings ; we are provided with ample library accommodation and with storage and safes for our publications and manuscripts of value. We have reading and other rooms for the use of the Fellows and the officials, and a house of residence for the caretaker. It is sometimes said that history repeats itself, a saying which in one particular applies to that of our Society. In 1810 the Society purchased No. 40 George Street, in which house it was accommodated until 1826, when it removed to the Royal Institution Building. George Street again provides us with a home, larger, more dignified, and more fully adapted to our present needs than the house purchased by the Society a hundred years ago, and with much more accommodation than was at our disposal in the rooms in the Royal Institution which we have just vacated.

Yet another link with the George Street of the past before I proceed to the proper subject of my address. The building which has been purchased for our use by the Commissioners of Works was erected by the Edinburgh Life Assurance Company in 1843. It occupied the sites of the houses Nos. 22 and 24 George Street. No. 22 belonged to Dr DAVID MACLAGAN, Surgeon-in-Ordinary to Queen Victoria, who resided in it for a number of years. His eldest son, Sir DOUGLAS MACLAGAN, though not born in the house, lived there during his youth and early manhood ; in 1843 he became a Fellow of the Royal Society, and from 1890 to 1895 he occupied the Presidential Chair.

As the Royal Society is now about to open a fresh page in its history, it may not be regarded as an inopportune moment to sketch the rise of scientific study in Scotland, the means and opportunities afforded for that purpose, the formation of Societies and

Institutions for the encouragement and diffusion of science in this city; also to put in the form of a continuous narrative the chief incidents in the growth of the Society during the century and a quarter that has elapsed since its foundation.

Prior to the eighteenth century, and indeed during a considerable part of its course, Latin was the language in use for the interchange of thought and information amongst educated people at home and abroad. Treatises were composed in this language, lectures were delivered in the Universities in Latin, and the Theses presented for graduation were written and defended in the same tongue. Readiness to speak and understand Latin was a common bond of union amongst the learned, and distinguished them from the unlettered classes, whether of higher or lower social degree. Scotland participated in the revival of letters during the sixteenth century, and the names of GEORGE BUCHANAN, the representative Scottish humanist and historian of his time, of ANDREW MELVILLE, humanist and theologian, of JAMES CRICHTON, surnamed the Admirable, were familiar to scholars throughout Europe. Contemporaneous with ANDREW MELVILLE was JOHN NAPIER, the laird of Merchiston, the inventor of logarithms, a man of a different order of mind from the famous divine, one who by the publication of his great treatises, which were written in Latin, created a fresh era in the science of numbers, and provided mathematicians with a new and powerful instrument. To be conversant with Latin was a necessity for all who aspired to take rank in their respective professions. Those whose means enabled them to travel and to study in foreign universities could avail themselves of the instruction imparted therein, without requiring to have, as a preliminary, a good acquaintance with the language of the people. To cite an illustrious example from the south of the Tweed. WILLIAM HARVEY, the son of a Kentish yeoman, was educated in classics and physics at Gonville-Caius College, Cambridge. In 1598 he went to the University of Padua, where he studied under FABRICIUS, at that time the most eminent professor of anatomy in Italy. Profiting by the best means of instruction available at that time, and as a result of his own subsequent and independent observations and experiments, he discovered the Circulation of the Blood, and wrote his treatise *De motu Cordis et Sanguinis*, which has made his name immortal, and has entitled him to be called the founder of exact physiological science, and the father of modern medicine.

Ambitious young Scotsmen did not lag behind in the desire to extend and perfect their studies by residence at schools of learning on the Continent. Literature, philosophy, and theology at first were the subjects of attraction; but later on, medicine and science were cultivated with great zeal, and instruction and training in their application were obtained abroad of a quality surpassing that procurable in the universities of their native land.

In the latter half of the seventeenth century, three Edinburgh physicians, Sir ROBERT SIBBALD, Sir ANDREW BALFOUR, and Dr ARCHIBALD PITCAIRNE, all of whom had studied abroad, took a leading part in the development and cultivation of medicine and science in this city.

Sir ROBERT SIBBALD, a cadet of the Sibbalds of Rankeillour in Fife, was born in

1641.* Educated in the Edinburgh High School and in the Arts Faculty, when Bishop LEIGHTON was Principal, he laureated at the age of eighteen. He commenced the study of medicine at Leyden in 1660, and paid special attention to botany and anatomy. He publicly defended his thesis, *De variis Tabis speciebus*, in the schools before the President, FRANCIS SYLVIVS, professor of medicine. STENO, the discoverer of the duct of the parotid gland, was his friend and fellow-student. He migrated from Leyden to Paris, where he studied under GUIDO PATIN, physician and man of letters, and worked at botany in the King's Garden. He afterwards visited Angers, where he took his degree of Doctor of Medicine, and in 1662 he returned to Edinburgh, and commenced to practise his profession. He became intimate with Dr ANDREW BALFOUR, who had spent some years in France and Italy, and had studied in their Universities. SIBBALD, BALFOUR, and PATRICK MURRAY the laird of Livingstone,† in order to encourage the study of botany, were bent on founding a medicine or physic garden, and, along with some other physicians, obtained a lease from the Town Council of the garden of Trinity Hospital for that purpose. They imported plants and seeds from abroad, obtained subscriptions from the nobility, the Exchequer, and members of the College of Justice, and established the garden which was the precursor of our world-famed Royal Botanic Garden.

In 1680, Drs BALFOUR, ARCHIBALD PITCAIRNE, Sir THOMAS BURNETT and other physicians met once a fortnight, or so, in SIBBALD's house, to confer on "what was most remarkable a doing by the learned, some rare cases that had happened in our practice, and an account of Bookes that tended to the improvement of medicine or natural history, or any other curious learning." So far as I have been able to ascertain, these conferences marked the first attempt in Scotland to bring together at regular intervals, for purposes of discussion and mutual improvement, those who had common interests in science and medicine. On St Andrew's Day, 1681, after much negotiation, conducted principally by Drs SIBBALD, BALFOUR, and STEVENSON, and with the aid of H.R.H. JAMES, Duke of York, and Sir CHARLES SCARBOROUGH, His Majesty's first physician, a patent was granted by King CHARLES II. to found the Royal College of Physicians of Edinburgh, and in 1684 SIBBALD was elected President of the College. After its institution, the meetings for discussion and interchange of ideas were discontinued in SIBBALD's house, and were held monthly in the College. CHARLES II. lives in the recollection of most people as a lover of pleasure, untrustworthy, indifferent to the welfare of his people, and ready to sacrifice the interests of his country in order to gratify his taste for luxury and ease, so that one of the wittiest of his courtiers suggested as his epitaph:

Here lies our sovereign Lord the King,
Whose word no man relies on,
Who never said a foolish thing,
And never did a wise one.

* I am indebted to *The Autobiography of Sir Robert Sibbald*, Edinburgh, 1833, for the facts regarding his life. This interesting volume is prefaced by a Catalogue of his Manuscripts in the Library of the Faculty of Advocates.

† BALFOUR's Letters on his Travels and his collections throw light on his own character and tastes, and on his relations with PATRICK MURRAY, Edinburgh, 1700.

We must in charity admit that, in granting a charter in July 1662 to the Royal Society of London, and one in 1681 to the Royal College of Physicians of Edinburgh, CHARLES did two wise actions, which have encouraged science, medicine and learning, and therein have redounded to his honour, and to that of his kingdom.

SIBBALD was made Geographer for the Kingdom in 1682 in acknowledgment of his studies on the natural products and geography of Scotland, and in the same year he was appointed physician to King Charles, and was knighted. In addition to his larger treatises on the geography, topography, and natural products of his native land, SIBBALD published in 1692 a small octavo volume, with illustrations, entitled *Phalainologia nova*,* in which he gave detailed descriptions of specimens of whales and dolphins which had been stranded from time to time on the Scottish coast. The volume contained the first description of the largest of all whales, which is now named after him, Sibbald's whale, *Balænoptera Sibbaldi*, a specimen of which came ashore in 1692 at Abercorn on the Firth of Forth, to be succeeded after a long interval by a second specimen, captured near North Berwick in 1831, and still later by another, stranded at Longniddry in 1869.†

Sir ANDREW BALFOUR, who was so closely associated with SIBBALD in the foundation of the Physic Garden and of the Royal College of Physicians, was an indefatigable, all-absorbing collector, and apparently was the first man in Scotland to form a museum of natural objects and rarities. His museum was joined to one formed by SIBBALD, who compiled and printed in 1697 a catalogue of the joint collection, with the title, *Auctarium Musæi Balfouriani e Musæo Sibbaldiano*. The collection consisted of minerals, rocks, and metals; rare productions of the animal kingdom; vegetable substances; works of art connected with the arts and sciences; along with pictures, manuscripts, and rare books. The museum was presented by SIBBALD to the University, to which he and Dr PITCAIRNE had been appointed titular professors of Medicine in 1685. Certain of the pictures and books are preserved in the University Library.‡ The natural objects were incorporated with the museum of Natural History formed by Professor ROBERT JAMESON in the early part of the nineteenth century, but, with a few exceptions, can no longer be traced. JAMESON's own collection in course of time filled two great apartments on the west side of the quadrangle of the University. It was transferred to the State in 1855, and became the nucleus of and furnished many valuable specimens to the collection of Natural History, now in the Royal Scottish Museum.

The scientific spirit and foresight shown by BALFOUR and SIBBALD more than two centuries ago gave an impetus to the study of the natural sciences in Scotland, which as time went on resulted in the establishment of two institutions of which Edinburgh may well be proud, the Royal Botanic Garden and the Royal Scottish Museum.

* Edinburgh, 1692; also reprinted, London, 1773.

† I gave an account of the Longniddry whale in a memoir published in the *Transactions* of this Society in Nov. 1870, vol. xxvi., in which I established the identity of the North Berwick and Longniddry animals with Sibbald's whale.

‡ I have referred more fully to this museum in my Address to the Museums Association in Edinburgh, 1901, published in the *Museums Journal* of that year.

Dr ARCHIBALD PITCAIRNE, to whom I have referred as a co-temporary of BALFOUR and SIBBALD, was educated in Paris; he obtained his degree in Medicine at Rheims in France, and afterwards commenced practice in Edinburgh. His ability was not in the direction of collecting and describing natural objects, but was that of a critic. He was a brilliant Latin scholar, a poet and a wit. He was "chosen as Professor of Physic in the University of Leyden, a distinction which he gained, partly by a learned treatise vindicating for HARVEY the discovery of the circulation of the blood."* After a year's absence he returned to Edinburgh, where he became recognised as the most distinguished physician of his time.

Early in the eighteenth century and during its continuance, a remarkable intellectual awakening took place in Scotland. Public affairs, with the exception of the abortive Jacobite risings in 1715 and 1745, had by this time become more settled. Through the development of agriculture, mining, manufactures and commerce, Scotland had begun to emerge from being a poor country to a state of comparative affluence. Men found it possible to direct their thoughts to the arts of peace and to study letters, philosophy and science. Within the Universities, as well as in cultured society outside them, men of marked ability came prominently to the front, many of whom acquired and have retained a world-wide reputation.

An important change took place within the Universities themselves in connection with the methods of instruction imparted in the Faculty of Arts. The old system of Regents, under which it was the duty of each Regent to act as tutor to a group of pupils from entrance to laureation, in all the subjects of a prescribed curriculum, began to be abolished, and a special subject was allotted to a particular teacher, who became a Professor in that subject.† Encouragement was in this way given to a more profound study and fuller exposition of the subjects entrusted to the Professors. Mathematics and Philosophy, both Natural and Mental, especially commended themselves to the Scottish intellect. The great academic family of the GREGORIES furnished professors of Mathematics to the Universities of Aberdeen, St Andrews, and Edinburgh, and one member of the family, DAVID GREGORY, was selected to be Savilian Professor of Astronomy in the University of Oxford. In the latter half of the eighteenth century two members of this family held in succession chairs of Medicine in the University of Edinburgh, and in the nineteenth another filled the chair of Chemistry. In 1715, COLIN MACLAURIN, a mathematician of the first rank, was made, at the age of nineteen, professor of Mathematics in Marischal College, Aberdeen, and, at the age of

* I am indebted for this and other references to professors to Sir ALEX. GRANT's *Story of the University of Edinburgh*, vol. ii., 1884.

† During the incumbency of the Regents, Latin was the medium of intercourse between teachers and students. After the introduction of Professorships the lectures in many subjects were delivered in Latin well into the eighteenth century. Sir ALEXANDER GRANT says that ST CLAIR, professor of Medicine, lectured in Latin (1726-1747), as indeed was the practice with all the Faculty of Medicine, except Anatomy. In Glasgow CULLEN lectured (1748) on Botany in Latin, but his lectures on Medicine were delivered in English. Sir ROBERT CHRISTISON relates in his *Autobiography* that in 1819 his oral examination for the degree of Doctor of Medicine was conducted in Latin. The Theses presented for graduation in Medicine in Edinburgh were written and printed in Latin down to 1833, and an occasional thesis in the same language was presented as late as 1844.

twenty-one, a Fellow of the Royal Society of London. He became professor of Mathematics in Edinburgh in 1725, and was the first occupant of a professorial chair to expound the Newtonian philosophy. His successors in the Edinburgh chair, during the same century, MATTHEW STEWART and JOHN PLAYFAIR, were also mathematicians of eminence; whilst ROBERT SIMSON, an authority on the works of Euclid, was a distinguished professor of the subject in Glasgow. The chair of Natural Philosophy, founded in Edinburgh in 1708, acquired a considerable reputation during the same century by the labours of ROBERT STEWART, ADAM FERGUSON, and JOHN ROBISON. The chairs of Mental and Moral Philosophy were filled with conspicuous ability by FRANCIS HUTCHESON in the University of Glasgow, by THOMAS REID, first in King's College, Aberdeen, and afterwards in Glasgow, by ADAM FERGUSON and DUGALD STEWART in the University of Edinburgh. Principal ROBERTSON was one of the leading historical writers of his time, whilst ADAM SMITH conferred lustre on the University of Glasgow by his classical treatise on the *Wealth of Nations*. Outside the University, DAVID HUME by his writings founded a school of philosophy which impressed his own and succeeding generations, and his *History of England*, from the lucidity of its diction, retains a permanent place in literature.

Great developments also took place in medicine and in the sciences on which it is based. The incorporation of the Physicians of Edinburgh into a Royal College in 1681, the severance in 1722 of the corporate interests of the Surgeons from those of the Barbers, and the granting a new charter in 1778 to the Surgeons, which incorporated them as a Royal College, greatly improved the tone and status of the medical profession in Edinburgh and in the adjoining counties. By the original Charter, or Seal of Cause, granted by King JAMES IV. in 1505 to the Barber Surgeons, power was given to them to receive each year "ane condampnit man," "to mak anatomea of quhairthrow we may haif experience." The Charter is careful to say, "after he be deid"; "ilk ane to instruct uthers; and we sall do suffrage for the soule. . . ." The records of the Surgeons, up to the last decennium of the seventeenth century, throw no light apparently on the character of the instruction which was imparted, or the extent to which the power conferred was made use of. In 1694 an important step in advance was taken. ALEXANDER MENTEITH, a member of the College, obtained from the Town Council authority to acquire the bodies "that die in the correction house," and a room for dissections. The Surgeons also were empowered to obtain bodies on condition that an anatomical theatre be built before Michaelmas 1697, where once a year a public anatomical demonstration, as much as can be shown on one body, shall be given. From a minute of the Surgeons of 1704, it appears that dissections of different parts of the human body were allotted to and described by each demonstrator. In 1705, ROBERT ELLIOT was appointed professor of Anatomy, and he was succeeded by ROBERT DRUMMOND and JOHN M'GILL, the Town Council and the Surgeons being jointly associated in the appointment. Early in January 1720, DRUMMOND and M'GILL stated their inability to attend to their professorship.

The time had obviously arrived to put the teaching of Anatomy and Medicine generally on a more permanent footing in Edinburgh. On 29th January 1720, on the recommendation of the Surgeons, ALEXANDER MONRO *primus* was elected by the Town Council, then the patrons of the University, professor of Anatomy during pleasure, and in 1722 his tenure of the chair was made *ad vitam aut culpam*. MONRO had been trained by his father, JOHN MONRO, who at one time was President of the Surgeons, for the practice of Medicine and Anatomy. He studied in London under CHESelden, and in Leyden under BOERHAAVE, and began his professorial career in Edinburgh at the age of twenty-two.* He combined in his own person the qualities of a man of science, a great teacher, and an able administrator.

In 1726, ANDREW PLUMMER and JOHN INNES were made professors of Medicine and Chemistry, and ANDREW ST CLAIR and JOHN RUTHERFORD were appointed professors of Medicine. The Faculty of Medicine in the University was now created, with MONRO *primus* as its father and founder. In 1738 it was strengthened by the appointment of CHARLES ALSTON as the professor of Botany and Materia Medica; and in 1746, the Royal Infirmary was opened and the teaching of clinical medicine was begun by JOHN RUTHERFORD. By the appointment in 1756 of THOMAS YOUNG to be professor of Midwifery, regular instruction on that subject was given to the students of medicine.† On the establishment in succession of these professorships in the University, the teaching of Medicine in Edinburgh ceased to have the desultory and occasional character which it had possessed before the time of the first MONRO. It became systematic and continuous during the session, each subject was expounded by an expert, the bearings of the subjects of instruction respectively to each other and on the scientific and practical training of the practitioner were explained and illustrated, and a School of Medicine in the proper sense of the word was instituted.

In 1747, ROBERT WHYTT succeeded ST CLAIR in the chair of the Institutes of Medicine, and attained a wide reputation as a physiologist. In 1754, ALEXANDER MONRO *secundus*, after pursuing his studies in Leyden, Paris, and Berlin, was appointed joint professor of Anatomy with his father; and in 1777 he was also made professor of Surgery. He retained the chairs until 1808, when he retired. His treatises on the Anatomy of the Nervous System, on Fishes, and his researches on the Lymphatics, placed him in the foremost rank of contemporary anatomists. During his term of office, and in conjunction with his eminent colleagues, the school of Medicine was not limited to the teaching of the apprentices and pupils of the Chirurgeons and Chirurgeon-Apothecaries in Edinburgh and the adjacent counties. It acquired a world-wide reputation, attracted students from England, Ireland, the Colonies and foreign parts, and in return supplied them with well-educated graduates in medicine.

* The facts regarding the rise of the school of Anatomy in Edinburgh are detailed in Dr JOHN GAIRDNER's *Historical Sketch of the Royal College of Surgeons*, Edinburgh, 1860; also his *Sketch of the Early History of the Medical Profession*, Edinburgh, 1864; and in Sir JOHN STRUTHERS' *Historical Sketch of the Edinburgh Anatomical School*, Edinburgh, 1867.

† Prior to this date JOSEPH GIBSON and ROBERT SMITH had held the appointment of City Professor of Midwifery, but it is probable that their teaching was confined to midwives.

One of the most renowned of MONRO's colleagues was WILLIAM CULLEN, who, after studying Medicine in Edinburgh, settled in Glasgow, in the University of which city he took the degree of M.D. He lectured there on Chemistry and Botany with great acceptance, and in 1751 he became professor of Medicine. He had, whilst in Glasgow, the design of founding a medical school, similar to that which had been established in Edinburgh some years previously.* So highly was he esteemed that in 1755 he was translated to the University of Edinburgh to be joint professor of Chemistry with ANDREW PLUMMER. In 1766 he was associated with JOHN GREGORY as professor of Medicine, in which chair he became in 1773 sole professor. CULLEN's writings and teaching were characterised by an accurate description of diseases and a comprehensive generalisation of medical facts. By the publication of his *Nosology* and his work on the *Practice of Physic* he displaced the famous Dutch physician BOERHAAVE from the position so long enjoyed as the leader in medical thought, and he himself became the supreme authority.

When CULLEN migrated to Edinburgh, JOSEPH BLACK, his favourite pupil, who had greatly distinguished himself in chemistry, became his successor in Glasgow. On CULLEN's translation from the Edinburgh chair of Chemistry to that of Medicine, BLACK was appointed to the chair of Chemistry in Edinburgh, which he held for nearly thirty years. BLACK's discoveries were of such fundamental importance that he is acknowledged to be one of the founders of modern chemistry. THOMAS CHARLES HOPE, like his predecessors CULLEN and BLACK, had been professor of Chemistry in the University of Glasgow, and was invited to become the colleague of the latter in the Edinburgh chair, in which he proved a luminous expositor of the subject.

The tenure by JOHN HOPE of the chair of Botany (1761-1786) is memorable for the removal of the Botanic Garden from the old site, where it had been established by SIBBALD and BALFOUR, to its present home in Inverleith Row, and for the separation of the teaching of *Materia Medica* from the chair of Botany. DANIEL RUTHERFORD, who succeeded him as professor of Botany and King's Botanist in Scotland, is noteworthy as the discoverer of nitrogen gas, one of the constituents of the atmosphere.

In 1770, a Regius Chair of Natural History was founded in the University. Its second occupant, JOHN WALKER (1779-1804), was a naturalist of repute, who commenced the formation of the museum, which, in the hands of his successor, ROBERT JAMESON, became the most important collection of natural objects in Scotland.

As an indication of the value attached in Scotland during the eighteenth century to the medical education to be obtained in foreign universities, I may state that, from the foundation of the Medical Faculty in the University of Edinburgh in 1726, until about the end of the century, fourteen of the professors in that Faculty studied, either in whole or in part, in universities in Holland, France, or Italy, and many took the degree of Doctor of Medicine abroad. Of these, ten were educated at the University of Leyden, to which they had been attracted by the fame of BOERHAAVE.

* *Life of Cullen*, by JOHN THOMSON, vol. i. p. 24: Edinburgh, 1859.

It may be thought that I have dwelt at too great length on the scientific and medical departments in the Universities, more especially in Edinburgh, and on the development of the branches of knowledge included in them. If this be a fault, I would, in justification, state that it was due to these developments that the ground was prepared and the seed was sown, by the germination of which the Royal and the kindred Societies which arose in this city during the eighteenth century came into existence. The language common to all cultured people at that time enabled students to migrate from one European university to another, and to converse and receive instruction through one of the noblest of tongues, without having to resort to such mongrel forms of speech as have recently been devised by some ingenious persons to facilitate intercourse amongst the nations. In the quality and range of their education and intellectual attainments, professors of Science and the leaders in Medicine were on an equal footing with the members of the Church and Bar, and with those who cultivated Philosophy and Literature. Members of the several professions acquired the habit of meeting together on a friendly footing, and were often joined by country gentlemen living in proximity to Edinburgh. Clubs and societies of various kinds, literary, social, medical, scientific and legal, became the fashion.

One of the earliest of these, of which there is a record, was instituted in 1716, "for literary conversation and improvement in composition." It was called the Rankenian Club, for its meetings were held in a tavern the proprietor of which was named Rankine.* From its environment, as in the case about a century later of the more celebrated *Noctes*,† which bear the name of Ambrose, also a tavern-keeper, the literary and philosophical discussions were doubtless mingled with the conviviality which we associate with the flow of wine and its exhilarating properties. The club appears to have lasted until about 1760. Amongst its members were Principal WILLIAM WISHART, D.D., COLIN MACLAURIN, and other professors in the University; MADOX the Lord Bishop of Worcester; several Lords of Session and Advocates; the Rev. GEORGE WISHART of the Tron, and other ministers of the Kirk; JOHN HORSLEY, the Rector of St Martin's in the Fields; several Doctors of Medicine, the most noteworthy perhaps of whom was Sir JOHN PRINGLE, who became in 1772 President of the Royal Society of London, an office which he held for six years.

Somewhat later, the Select Society was projected by ALLAN RAMSAY, the King's Painter, for the purposes of literary discussion, philosophical inquiry, and improvement in public speaking. It prospered, and numbered in 1779 more than 150 members, amongst whom were the most distinguished men of letters at that time in Edinburgh and the vicinity.

In 1731, the leading physicians and surgeons in Edinburgh instituted a Medical

* An account of the Rankenian Club and the Select Society is given in the *Memoirs of the Life and Writings of Henry Home, Lord Kames*, by ALEX. FRASER TYTLER of Woodhouselee, vol. i. p. 174, and Appendix, p. 50: Edinburgh, 1807. Reference is also made in these memoirs to a literary society founded by THOS. RUDDIMAN the grammarian, chief librarian to the Faculty of Advocates, along with the Masters of the High School.

† The *Noctes Ambrosianæ* were contributed to *Blackwood's Magazine* between 1822 and 1835, and those in which Professor JOHN WILSON took part, 1825-1835, were republished in four volumes, Edinburgh, 1855.

Society for the improvement of medical knowledge. MONRO *primus* acted as secretary, and under his supervision six volumes of *Medical Essays and Observations* communicated to the Society were published.* The *Essays* reached a fifth edition in 1771. They were translated into some foreign languages, were highly commended, and assisted in making the medical school of the University known throughout Europe. Shortly after the formation of the Medical Society, several of the leading lawyers, professors in Edinburgh, Glasgow, and St Andrews, country gentlemen, WILLIAM ADAMS the architect, and others formed a Society for Improving Arts and Science, particularly Natural Knowledge. COLIN MACLAURIN was the moving spirit, he and ANDREW PLUMMER were secretaries, and the first President was JAMES DOUGLAS fourteenth Earl of Morton, who became, in 1764, President of the Royal Society of London.†

A list of the members of this Society has been published bearing the date 1739, but the late Principal FORBES,‡ who carefully inquired into its history, considered that 1737 was more correct. It does not appear that any of the communications made to this Society in its early years were immediately published, as the troubles which arose in connection with the Jacobite rising in 1745 and the death of MACLAURIN in the following year suspended for a time its work.§ Proposals had been, however, made to the Medical Society to form along with it a conjoined Society, which should carry its disquisitions into other parts of nature than those which immediately related to medicine, on the understanding that theology, morals, and politics were to be excluded. The larger

* First edition, Edinburgh, 1733. They were dedicated to the President, Council, and Fellows of the Royal Society of London. Many communications were made by MONRO and his colleagues in the Faculty of Medicine, by Dr THOMAS SIMSON, professor of Medicine in St Andrews, and by leading medical practitioners in Edinburgh and throughout Scotland.

† It may not be out of place to refer to the part taken by Scotsmen in the early history of the Royal Society of London. In the original Charter appear the names of Sir ROBERT MORAY, Secretary to the Privy Council in Scotland, and WILLIAM AERSKINE (Erskine), a son of the Earl of MAR, one of the cupbearers to King CHARLES. They had been his companions in exile, and after the Restoration they were attached to his court and person. MORAY had scientific tastes and pursuits, which led to his election as President of a Society for the promotion of Physico-Mathematical experimental learning, which met in Gresham College, London, 1661-62. This Society became, on the receipt of a Royal Charter in July 1662, the Royal Society of London, under the presidency of WILLIAM, Viscount Brouncker. MORAY had without doubt been the King's adviser in the granting of the Charter. About a century later JAMES DOUGLAS, Earl of Morton, a mathematician and astronomer, a friend of COLIN MACLAURIN, and a former President of the Philosophical Society of Edinburgh, was in 1764 elected President of the Royal Society of London. Eight years later Sir JOHN PRINGLE, of the family of Stichel, was made President. He had graduated as M.D. at Leyden in 1730, and settled in Edinburgh, where he held the Chair of Moral Philosophy in the University from 1734 to 1742. He then joined the army as a surgeon, ultimately became Physician-General to His Majesty's forces, wrote a famous book on *Diseases of the Army*, resided in London, and in 1772 was appointed President. After a long interval, Lord KELVIN occupied the Chair 1890-95, and last year Sir ARCHIBALD GEIKIE was made President. Although not of Scottish birth or parentage, Scotland may claim to have participated in the training of Sir J. DALTON HOOKER, President 1873-78, who was educated at the High School and University of Glasgow, during his father's tenure of the Regius Chair of Botany in the University; also of Lord LISTER, President 1895-1900, who carried out his far-reaching researches when he held the Chair of Systematic Surgery in the University of Glasgow, and subsequently that of Clinical Surgery in the University of Edinburgh.

‡ Opening Address to Royal Society, 1st Dec. 1862, *Proceedings R.S.E.* of that date; also reprinted in the Index volume to the *Transactions* of the Society compiled by ALEX. and P. NEILL FRASER, Edinburgh, 1890.

§ COLIN MACLAURIN was the youngest son of the Rev. JOHN MACLAURIN, minister of Kilmodan, Argyllshire, and brother of the Rev. JOHN MACLAURIN, minister of North-West Parish, Glasgow, an eminent theologian. A monument to the father and his two distinguished sons was placed, in 1908, in the Parish Church, Glendaruel, by Sir JAMES RUSSELL, M.B., LL.D., F.R.S.E., and his brother, Lieut.-Colonel A. F. RUSSELL, C.M.G., M.B., natives of Kilmodan.

Society formed by this combination became the Philosophical Society of Edinburgh, and it published between 1754 and 1771* three volumes of *Essays and Observations, Physical and Literary*, which had been read before the Society, the last two of which appeared when DAVID HUME and MONRO *secundus* were Secretaries.† The *Essays* embraced a wide range of subjects, mathematical, physical, anatomical, botanical, medical, and surgical, communicated amongst others by COLIN MACLAURIN, JOHN and MATTHEW STEWART, JOSEPH BLACK, HENRY HOME (Lord Kames), MONRO, ALSTON, PLUMMER, PORTERFIELD, WHYTT, and CULLEN. Vol. i. is of interest in containing two papers by ALEX. MONRO jun., afterwards *secundus*, then a student of medicine; and in vol. iii. a letter to DAVID HUME is printed, dated 1762, in which BENJAMIN FRANKLIN described his method of securing houses from the effects of lightning. To quote the words of Principal FORBES, the Philosophical Society of Edinburgh was the immediate parent of the Royal Society.‡ As the Philosophical Society was a voluntary association, liable to be interrupted in its work, or even to be dissolved, it was considered advisable that an attempt should be made to form a Society on a more permanent basis. A meeting of the professors of the University, many of whom were likewise members of the Philosophical Society, was called in 1782, when Principal ROBERTSON proposed a scheme “for the establishment of a New Society on a more extended plan, and after the model of some of the foreign Academies, which have for their object the cultivation of every branch of science, erudition, and taste.”§ As in the formation of the Royal Society of London the patronage of the King had been solicited and a Charter of incorporation by the Crown obtained, a similar course in this instance was proposed and agreed to, and in March 1783 King GEORGE III. granted a Charter under the name of the Royal Society of Edinburgh.

The Charter provided “ut Societas Literaria Edinburgi institueretur, ad Statum illius partis Imperii nostri quæ Scotia vocatur accommodata,” from which it is obvious that its scope was not limited to the city after which it was named, and in which it had its seat, any more than the corresponding Royal Society in the southern division of the kingdom was exclusively a Society for London itself. The Charter defined the range of study and research to be included in the work of the Society, and specifically named along with the sciences of Mathematics, Physics, Chemistry, and Natural History, also Archæology, Philology, and Literature. The Society was incorporated under the auspices of men of the highest position in Scotland, social, scientific, and literary. HENRY third Duke of Buccleugh, the President of the Court of Session, the Lord Justice-Clerk, the Chief Baron of the Exchequer, the Lord Provost of the City, ALEXANDER DICK and GEORGE CLERK, Baronets; Principal ROBERTSON, Professors WILLIAM CULLEN, ALEXANDER MONRO, HUGH BLAIR, JOHN WALKER, ADAM FERGUSON, ANDREW DALZIEL,

* Vol. i. in 1754, vol. ii. in 1756, vol. iii. in 1771.

† *Life, Writings, and Character of Dr Alex. Monro secundus*, by ANDREW DUNCAN, *sen.*, Edinburgh, 1818.

‡ Professor J. D. FORBES was General Secretary to the Royal Society, 1840–1860, and afterwards Principal of the University of St Andrews.

§ History of the Royal Society of Edinburgh in vol. i. of the *Transactions*; also *Memoirs of the Life and Writings of Lord Kames*, vol. i. p. 185, footnote.

and JOHN ROBISON; ALLAN MACONOCHE, the Solicitor-General; JAMES HUNTER BLAIR, M.P., ADAM SMITH, JOHN MACLAURIN, WILLIAM NAIRN and ROBERT CULLEN, advocates, were named in the Charter.*

The first meeting of the Society was held on June 23, 1783, in the University Library, with Principal ROBERTSON in the chair, when it was resolved that all the members of the Philosophical Society should be assumed as members of the Royal Society, and that the Judges of the Supreme Court and a number of other gentlemen should be invited to join it. Professor JOHN ROBISON was elected General Secretary, and Mr ALEXANDER KEITH, W.S., who afterwards founded the Keith prize, was appointed Treasurer.

The Society in its first year numbered 102 resident and 71 non-resident members. It is interesting to note that the Senatus of the University of St Andrews was represented by 10 members, King's and Marischal Colleges of the two Universities of Aberdeen, by 16, whilst 15 members of the Senatus of the University of Glasgow were original Fellows; so that its national character was emphasised from its foundation.

The Fellows were divided into two classes, Physical and Literary, and a short time after the foundation of the Society the Physical class numbered 101, whilst the Literary class contained 114 Fellows. In the Physical class were JOSEPH BLACK, CLERK of Eldin, JAMES GREGORY, JAMES HUTTON, JOHN PLAYFAIR, DUGALD STEWART, Sir JAMES HALL, JAMES WATT and ALEXANDER WILSON of Glasgow; whilst in the Literary class DAVID HUME, JOHN HOME, HENRY MACKENZIE, ALEXANDER TYTLER, Lords MORTON and HOPETOUN, ARCHIBALD ALISON, ADAM FERGUSON, EDMUND BURKE, WILLIAM BEATTIE, ANDREW DALZIEL, JOHN HUNTER of St Andrews, THOMAS REID and JOHN YOUNG of Glasgow, and Sir ROBERT LISTON were distinguished ornaments.

In the first four volumes of the *Transactions* of the Royal Society, from 1783 to 1797, the papers were grouped into two classes. In volume i., twelve physical papers were published and eight literary; in volume iv., thirteen physical papers and only two literary. It became obvious, therefore, at an early date that the physical or scientific work of the Society would dominate the literary. In volume v. (1805) it was not thought necessary to divide the published memoirs into these groups, and two papers on literary subjects and two biographies were printed without being classified apart from those relating to science. In the course of time communications on literary subjects became so few in number that they formed only a small part of the work

* In addition to the Societies named in the text, others arose in Edinburgh during the eighteenth century. In the *History of the Speculative Society* (Edinburgh, 1845) an account is given of debating societies of which the following are still in active life. The Speculative Society itself was established in 1764 to debate historical, literary, and political subjects, and it has held its meetings continuously in the University since then. The Royal Medical Society, founded in 1737 by WILLIAM CULLEN and other students, obtained a Charter in 1779; it acquired buildings with a hall for its meetings, and a valuable library, and it continues to be an important auxiliary to the medical school. The Royal Physical Society, for the cultivation of physical science in a wide sense, was formed in 1782, and was incorporated by Charter in 1788; it publishes an annual volume of proceedings. The Juridical Society is composed of lawyers, and dates from 1773; the Dialectic Society, for literary and philosophical composition, criticism, and debate, arose in 1787. The Æsculapian Club was instituted in 1773; the Harveian Society was founded in 1778 in memory of WILLIAM HARVEY; like the Æsculapian, it continues to promote social and harmonious feeling amongst the members of the medical profession.

of the Society. On November 24, 1828, the Society resolved to discontinue the practice which had prevailed up to that time of appointing a Vice-President and Secretary to each of the Literary and Physical classes, as separate meetings of these classes had for a long time ceased to be held.

From its foundation the Society exercised the right of electing foreign non-resident Fellows, as had indeed previously been done by its predecessor, the Philosophical Society. In the first year of its foundation the following names of distinguished foreigners appear, amongst others, in the roll:—BUFFON, BENJAMIN FRANKLIN, also PETER CAMPER one of the pioneers of physical anthropology. As evidence of the position attained by Medical Graduates of the University a century and a quarter ago, and of the esteem in which they were held abroad as well as at home, the names of Dr JOHN ROGERSON, first physician to the Empress of Russia, and of Drs ALEXANDER GORDON and LIONEL CHALMERS of South Carolina, who, I understand, took a leading part in the foundation of the University in that State, appear in the list for 1783, the year of the foundation of our Society. In the early part of the succeeding century, WERNER of Freiburg is on the roll, a name which recalls the old controversy between the opposing schools of geology, the Vulcanists and Neptunists; whilst LA PLACE, LA GRANGE, BIOT, AMPÈRE, BERZELIUS, and ARAGO were selected as leaders in the Mathematico-physical Sciences, and CUVIER, DE CANDOLLE, BLUMENBACH and HUMBOLDT were representative of branches of Natural Science. During the Presidency of Sir WALTER SCOTT, FRANCIS CHANTREY, the leading sculptor of his time, was elected in 1822, and in the following year J. WOLFGANG GOETHE, distinguished both in literature and science, was chosen as an honorary fellow of the Society.

The first President of the Society was HENRY third Duke of Buccleuch, who communicated in 1785, to volume i. of the *Transactions*, an abstract of a register of the weather for ten years kept at Branhholm, near Hawick, with a comparative view of the rainfall for five years at Branhholm, Dalkeith, and Langholm, residential seats of his family. He was succeeded in 1812 by Sir JAMES HALL, whose memoirs, principally on the structure of rocks and on the revolutions of the surface of the earth, printed in volumes v., vi., vii., and x. of the *Transactions*, were important contributions to geological science. In 1820, Sir WALTER SCOTT, who had been elected a Fellow in June 1800, was appointed President, and held the office until his death in 1832. His election testified to one of the original objects of the Society, and to his pre-eminent place in letters; though in his earlier years of office he regularly presided at the meetings, he did not contribute any memoirs to the *Transactions* of the Society. He was succeeded by Sir THOMAS MAKDOUGALL BRISBANE, the founder of the prize which bears his name, who remained in office until his death in 1860. The observations on Magnetism and Meteorology conducted for a series of years by Messrs RUSSELL and BROWN, at the President's expense, in an observatory established at his residence at Makerstoun, Roxburghshire, and published in the *Transactions* of the Society, are memorials of his practical interest in science.

Although by the Laws of the Society the President was elected annually, it was customary in its early days to re-elect year by year virtually during life, and Sir THOMAS MAKDOUGALL BRISBANE occupied the chair for no less than twenty-eight years. In February 1860, the Society resolved that, while the President and other office-bearers should continue to be elected annually, in future the re-election of the President should not be expected to take place after he has held office for a period of five years, and that this understanding should be recorded in the Minutes of the Society. With one exception, viz. that of Lord KELVIN, this arrangement has been carried out by the Society since the resolution was adopted.

In the original Charter of incorporation it was provided that collections of Natural History acquired by the Society should be deposited in the University, and those of Antiquities in the Library of the Faculty of Advocates. Early in the last century it was considered that much inconvenience would result if the specimens which served to illustrate the subjects under discussion were not at hand, when reference should be necessary. A new Charter was accordingly applied for, and was granted by the King on 30th August 1811, to enable the Society to retain the collections in its own possession. As time went on and the specimens accumulated, the space at the disposal of the Society, for the purposes of a museum, became too small for the proper lodgment and display of the specimens. In November 1859, the Curator of the Library and Museum Committee presented a report to the Council, in which it was pointed out that the attempt to maintain a general Museum of Natural History was inexpedient, and that the Society's collection should be limited to the department of Geology and Mineralogy, of which it possessed a very valuable and useful series of specimens. It was also recommended that the Zoological, Botanical, Anatomical and miscellaneous specimens should be deposited in other museums in Edinburgh, where they could be accessible to persons interested in the subjects. The report was adopted by the Council of the Society, and the specimens were distributed to the Royal Botanic Garden, the Natural History and Industrial Museums (now conjoined as the Royal Scottish Museum), the Museum of the Royal College of Surgeons, and that of the Society of Antiquaries.

In 1877, the continuous growth of the Library made further claims on the limited space at the disposal of the Society. The Council thereupon adopted a report of its Library Committee, that only the specimens referred to in papers read before the Society and published in its *Transactions*, or in contemporary journals, as well as those of historic interest, the most important of which was the collection made by URE of Rutherglen, should be retained. Also that the AGASSIZ collection of type specimens should be presented to the Museum of Science and Art, and the remainder to the collection of Geology and Mineralogy then being formed by Professor ARCHIBALD GEIKIE for the Geological department in the University.

The Society commenced to publish its *Transactions* in 1788, and up to the present date forty-six quarto volumes have appeared. Volumes i. to v. contained chapters entitled "History of the Society," which included its *Proceedings* from 1783 to 1805.

The publication of the *Proceedings* was then suspended for nearly thirty years, but in December 1832 the Society began to issue the *Proceedings* independently, from which date to May 1844 they were collected and published, in 1845, in an octavo volume, to be followed by twenty-five similar volumes up to 1907, when they were enlarged to a super-royal octavo.

The general purport of the Memoirs in the Literary class, published in the early volumes of the *Transactions*, may be gathered from the following titles :—"The Ancient Hellenes," "The Greek Language," "Troy, its Site and its Capture," by Dr DOIG, Professor DALZIEL, JOHN MACLAURIN, M. CHEVALIER, and Professor JOHN HUNTER respectively; "The Origin and Structure of European Legislatures," by ALLAN MACONCHIE; "The Principles of Historical Composition," also "Synonymous Terms in all Languages," by Professor JOHN HILL; "Rhythmical Measures," by the Rev. WALTER YOUNG; "The Sixth Book of the *Æneid*," by Dr JAMES BEATTIE; "The German Theatre," by HENRY MACKENZIE; "The Origin and Principles of Gothic Architecture," by Sir JAMES HALL; "The Moods of Verbs," by Dr JAMES GREGORY; "Extraordinary Structures on the Tops of Hills in the Highlands," by ALEXANDER FRASER TYTLER; "A Biography of Lord President Miller of Glenlee," by DAVID HUME; "The Character of Hamlet," by the Rev. THOMAS ROBERTSON, minister of Dalmeny; "An Ode on the Popular Superstitions of the Highlands," by WILLIAM COLLINS, the poet, addressed to JOHN HOME, the author of *Douglas*, and communicated by Dr ALEXANDER CARLYLE, minister of Inveresk. In later volumes, Memoirs either philological or biographical were communicated by DUGALD STEWART, JOHN PLAYFAIR, MACVEY NAPIER, Archdeacon WILLIAMS, GEORGE DUNBAR, J. STUART BLACKIE, JOHN MUIR, ALEXANDER BRYSON, W. F. SKENE, JAMES DONALDSON, and W. ROBERTSON SMITH.

The numerous Memoirs in the Physical class during the century and a quarter of the life of the Society embraced a great range and variety of the subjects which, during that period, were prominently under inquiry and discussion by men of science. To recite even their titles and the names of their authors would occupy time and be tedious to my auditors. Without specially particularising the Fellows still with us and actively engaged in work, it may not be out of place to refer briefly to some of the most noteworthy of past contributors.

In the early volumes, the Mathematical papers by JAMES IVORY, JOHN LESLIE, JOHN PLAYFAIR, WILLIAM WALLACE attracted attention; and from that time onwards communications on various branches of the parent of sciences were made by CHARLES BABBAGE, STEPHEN DAVIES, PHILIP KELLAND, BISHOP TERROT, JAMES THOMSON, G. G. STOKES, ARTHUR CAYLEY, WILLIAM THOMSON, EDWARD SANG, H. FOX TALBOT, THOMAS MUIR, and particularly P. G. TAIT, who for a number of years was General Secretary to the Society.

The *Transactions* of the Society, and in later years the *Proceedings* also, are rich in contributions to the several branches of Natural Philosophy. In the first and second volumes of the *Transactions* appeared Memoirs by Professor JOHN ROBISON, in which

the Orbit and the Motion of the planet named Georgium Sidus, discovered in 1781 by Dr HERSCHEL, were determined from observation. Since then, Astronomical Memoirs have from time to time been communicated by various observers, the most elaborate of which were a series by PIAZZI SMYTH, more especially on the lines in the solar spectrum, in several volumes of the *Transactions*. In addition to separate Memoirs by Sir T. MAKDOUGALL BRISBANE and JOHN ALLAN BROWN, vols. xvii., xviii., and xix. are devoted to the records of the Makerstoun Observations.

In vol. vi., Sir DAVID BREWSTER, afterwards one of the Presidents, published his first paper, and onward to vol. xxv. a succession of Memoirs appeared from his pen dealing for the most part with Light and the optical properties of Crystals and other mineral substances. In vol. xiii., JAMES D. FORBES, for twenty years the General Secretary, discussed the Horary Oscillations of the Barometer, and in a number of succeeding volumes he devoted a series of Memoirs to researches on Heat, Magnetism, and Temperature. Lord KELVIN's Memoirs on the Dynamical Theory of Heat and on Vortex Motion constituted fundamental advances in Physical Science. The researches of W. J. MACQUORN RANKINE, BALFOUR STEWART, FLEEMING JENKIN, WILLIAM SWAN, and Lord RAYLEIGH added to the knowledge of the subjects on which they wrote. The numerous papers by P. G. TAIT, both in the *Transactions* and *Proceedings*, abounded in applications of Mathematics to the elucidation of physical problems; and JAMES CLERK MAXWELL applied his keen intelligence in a similar direction.

The physical and engineering laboratories, instituted some years ago in the Universities, have given improved opportunities for research, which have led to the communication of a number of Memoirs to the Society.

Much active work was accomplished in Chemical research. JOSEPH BLACK's great discoveries on Fixed Air and Latent Heat were made before the Royal Society was founded, but he had communicated to our immediate parent, the Philosophical Society,* an important essay on the relation of the caustic to the mild alkalies, and in vol. iii. of our *Transactions* appeared his analysis of the Geyser and other Hot Springs in Iceland. In vol. iv., THOMAS CHARLES HOPE gave an account of a mineral from Strontian in Argyllshire, and of his discovery in it of a new kind of earth now called Strontia. To vol. v. he communicated an important series of experiments on the contraction of water by heat at low temperatures, which established the important fact that water attained its maximum density several degrees above the freezing-point.

A series of papers mostly on the chemical composition of minerals and mineral waters, by THOMAS THOMSON and others, appeared in the volumes immediately following. In vol. xii., THOMAS GRAHAM published his celebrated Memoir on the Law of the Diffusion of Gases; and in vol. xxvi., THOMAS ANDREWS of Belfast inquired into the Heat developed in the combination of acids and bases. The products of decomposition and destructive distillation of oils, vegetable and animal substances, engaged the attention of THOMAS ANDERSON and of others working in his laboratory in the University of Glasgow.

* *Essays and Observations, Physical and Literary*, vol. ii. p. 172, 1770.

GEORGE WILSON investigated the presence of fluorine in rocks, minerals, and plants, and he also considered if nitric acid is a source of nitrogen in plants. As we approach nearer to our own times, papers dealing with a variety of subjects have been communicated by a younger generation of chemists, many of which were the record of researches conducted in the chemical laboratory of this and other Scottish universities.

From the foundation of the Royal Society, Geology has been a prominent subject of inquiry. The institution of the Society had indeed the effect* of calling forth from JAMES HUTTON a communication which contained a concise account of his Theory of the Earth,† which he had evolved after many years of thought and travel. HUTTON's view of the structure of the crust of the globe; of the consolidation of the rocks by subterranean heat and compression, out of loose material collected at the bottom of the sea; of the subsequent upheaval of the sea-floor to form the dry land, during which process the hardened marine sediments were tilted, folded, and fractured; of the igneous origin of granite and other intrusive rocks, which were at that time generally believed to be chemical precipitates from sea-water; of the gradual degradation of the land-surface by superficial agencies, and the formation of valleys by the excavating action of running water, were for many years lively subjects of discussion. His main principles have been generally accepted, and he is now regarded as the father of physical geology. In connection with the effect produced by the atmosphere, HUTTON also propounded in our *Transactions* (vols. i. and ii.) a Theory of Rain, in the course of which he studied the production of rain in different climates and in different regions of the earth, which showed that the quantity of rain is proportional to the humidity of the air and to the causes which promote the mixture of different portions of air in the upper regions of the atmosphere.

The friend and devoted disciple of HUTTON, Sir JAMES HALL, the second of our Presidents, communicated to our *Transactions* masterly papers in which he tested HUTTON's conclusions by experiments on Whinstone and Lava, and studied the effects of compression in modifying the action of heat upon rocks, with the result that he considered the views advanced by HUTTON as to the igneous origin of intrusive rocks, and the conversion of common limestone into marble, had been established by direct experiment. In later volumes he also discussed the vertical position and convolutions of the Silurian strata of the Berwickshire coast, and showed how these phenomena could be experimentally imitated. HALL's experiments were the first of their kind, and are often referred to in current geological literature. He may be said, indeed, to be the father of experimental geology. The work by which JOHN PLAYFAIR is probably best known at the present time is his *Illustrations of the Huttonian Theory* (1802), which is generally acknowledged to be one of the classics of geological science.

The *Transactions* also contain important papers on Geological and Mineralogical

* "Biographical Account of the late Dr James Hutton," by JOHN PLAYFAIR, *Transactions*, vol. v. part iii. p. 39, 1805.

† *Transactions*, vol. i. p. 209, 1785. This outline was followed ten years later by the publication of his famous "*Theory of the Earth, with proofs and illustrations.*"

subjects by LORD WEBB SEYMOUR, SIR GEORGE MACKENZIE, THOMAS ALLAN, JOHN FLEMING, WILLIAM HAIDINGER, LORD GREENOCK, DAVID MILNE HOME, JAMES D. FORBES, the Rev. BOOG WATSON, the Rev. THOMAS BROWN, and M. FOSTER HEDDLE.

The institution of the Geological Survey, the settlement of a distinct division of the Survey in Scotland, and the foundation of the Murchison Chair of Geology in the University of Edinburgh greatly stimulated geological study. Our *Transactions* are enriched by Memoirs contributed by members of the Survey, who are still actively engaged in observation, and in penetrating the secrets of the rocks and of the Ice age. Fellows of the Society have deciphered the fossilised forms of ancient life, the plants of the coal-fields, the fishes of the Carboniferous, Devonian, and other strata; whilst molluscs, crustacea, and scorpions have also been the subjects of interesting Memoirs.

Papers on Meteorological subjects have from time to time been read to the Society. PATRICK NEILL, the founder of the Neill Prize, gave an account of a remarkable hail storm in Orkney in 1818.* JOHN AITKEN made an interesting demonstration of the influence exercised by the dust in the atmosphere in the production of fogs and clouds. Our late colleague, ALEXANDER BUCHAN, soon became known as a diligent inquirer into the pressure of the atmosphere, the prevailing winds, and the oscillations of the barometer. The institution of the Meteorological Society of Scotland has given a great stimulus to the study of weather conditions, and the establishment and maintenance of observatories, between the years 1883 and 1892, on the summit and at the foot of Ben Nevis, enabled a great mass of barometric and other records to be collected by several observers, which Dr BUCHAN, in conjunction with one of the observers, Mr R. TRAILL OMOND, was engaged in carefully analysing at the end of his long and meritorious life, and which are now in course of publication in four volumes of the *Transactions* of the Society.

Three Fellows of the Society, including Sir C. WYVILLE THOMSON, the Director, were members of the civilian staff of H.M.S. *Challenger* during her scientific cruise. The Society was the medium of publication of papers on the Physico-chemical branch of the work by Mr J. Y. BUCHANAN, whilst Sir JOHN MURRAY described the more general Oceanographical results of the voyage. The fifty volumes of *Reports* in large quarto edited by the latter, and profusely illustrated, are an enduring memorial of the biological and oceanographical work accomplished by and through the Expedition. The stimulus given to the study of the ocean led, on the return of the *Challenger*, to a closer investigation of the Faroe Channel and of our own seas, which resulted in considerable additions being made to our knowledge. Recently the fresh-water lochs in Scotland have been subjected to very careful investigation by a group of younger naturalists working in the *Challenger* laboratory and elsewhere, and their results are recorded in our *Proceedings* and *Transactions*. We owe also to our General Secretary, Professor

* PATRICK NEILL was the head of the firm of NEILL & Co., who have been the Society's printers from the institution of the Society in 1783 to the present day.

CHRYSTAL, important memoirs on the rhythmic variations which occur in the level of our fresh-water lakes, and a mathematical elucidation of the phenomenon.

Papers on Medical questions, in the more technical sense, have not formed a part of the work of our Society, but the sciences on which Medicine is based, and which have an application to practice, have been pursued with diligence and profit. Plants from which medicinal substances are derived, and the active principles obtained from them, were investigated by ANDREW DUNCAN, Sir ROBERT CHRISTISON, afterwards our President, JOHN HUTTON BALFOUR, for many years the General Secretary, Sir DOUGLAS MACLAGAN, and Sir THOMAS R. FRASER. The last-named observer and ALEXANDER CRUM BROWN, working conjointly, communicated elaborate Memoirs on the connection between Chemical constitution and Physiological action, which established new and important relations between many medicinal substances. About the same time, ALEXANDER DICKSON contributed Memoirs on the embryology and development of a number of plants. J. M. MACFARLANE and other observers have described the minute structure of plants. Vol. xxxi., published in 1888, was devoted to a systematic description by BAYLEY BALFOUR of the Botany of Socotra.

Anatomy, human and comparative, and Zoology, did not engage to any extent, in the infancy of the Society, the attention of the Fellows; MONRO *secundus* and ROBERT KNOX seem to have been the only contributors of Memoirs on these subjects to the early volumes. About the year 1840, RICHARD PARNELL investigated the fishes of the Firth of Forth (vol. xiv.); JOHN SHAW and ANDREW YOUNG, in the same and the next volume, conducted a series of important observations which proved that the fish named parr, smolt, and grilse are the successive stages in the development and growth of the salmon. JOHN GOODSIR also, sometimes alone, at others in conjunction with EDWARD FORBES, began to contribute to the *Transactions* papers on Marine Zoology. GOODSIR's most important contribution, however, was a Memoir on the ultimate Secreting Structure and on the Laws of its function (vol. xv.). The discovery by SCHLEIDEN and SCHWANN that plants and animals were built up of the anatomical units called Cells, led GOODSIR, along with the younger anatomists of his time, to carefully investigate, with the aid of the compound microscope, the structure of cells and to determine the share taken by their constituent parts in the discharge of function. In this Memoir, GOODSIR showed by a variety of examples that the cells of glands contained the characteristic secretion of these organs, and he established the fact that they were the active structures engaged in the production of their secretions.

Memoirs on Marine Zoology by J. D. MACDONALD, G. J. ALLMAN, and W. C. M'INTOSH appeared in later volumes; and in recent years the Society has received and published a number of papers on Anatomy, human and comparative, including Physical Anthropology, and on Zoology general and descriptive, many of which have been prepared from materials provided in the anatomical and zoological departments in the universities and in laboratories of marine zoology.

In 1811, CHARLES BELL was elected a Fellow of the Society. In August of that

year he had printed and submitted for the observations of his friends an "Idea of a New Anatomy of the Brain,"* in which he announced an entirely new principle of investigating the functions of the nervous system. He considered that the divisions of the brain, from which the nerves arose, might have distinct endowments, and that the nerves connected with each division would partake of the same endowments. He stated, as the result of his experiments, that convulsions followed irritation of the anterior part of the spinal cord and the anterior roots of the spinal nerves, but that injury of the posterior part of the cord and division of the posterior roots did not occasion convulsions, and he came to the conclusion that every nerve possessing a double function obtained it by having a double root. These experiments, which were analytic of the functions of a spinal nerve, were the starting-point of our present conceptions of the physiology and pathology of the nervous system, and gave to CHARLES BELL a place in the highest rank of discoverers. In 1807, BELL had left Edinburgh for London to establish a school of Anatomy in that metropolis, where he continued to develop his ideas on the physiology of the nervous system and to extend them to the cranial nerves, and he communicated Memoirs on the subject in 1822 and 1823 to the Royal Society of London.† In further extension of his thoughts and researches, BELL read to our Society in 1838 three Memoirs on the Nerves of the Brain, and contrasted them with the Spinal Nerves.‡ The double origin and function of the latter are, he says, the cause of their uniformity and simplicity of distribution; whilst the course, distribution, and apparent intricacy of the nerves of the brain are associated with their distinct origin and special endowment.

Papers by BREWSTER, J. D. FORBES, and W. PULTENEY ALISON appeared from time to time on the physiology of the eye and on vision, and the last-named energetically defended the doctrine of Vital Affinity. JOHN DAVY wrote on the coagulation of the blood and on other physiological questions. J. MATTHEWS DUNCAN communicated Memoirs on fertility, fecundity, and sterility, and on a lower limit to the power exerted in the function of parturition. JAMES DEWAR and J. G. M'KENDRICK experimented on the physiological action of light on the eye, the determination of the electro-motive force of the visual apparatus of the optic nerve, and whether this force was affected by light. The experiments showed that the electrical alteration was due to the action of light on the retina itself, and that the effect with varying luminous intensity seemed to follow closely ratios given by the psycho-physical law of FECHNER. ALEXANDER CRUM BROWN communicated a note on the sense of Rotation, the axis about which rotation of the head takes place, its direction and rate. He established the semicircular canals of the labyrinth of the ear as the peripheral organs affected by rotation, through which the axis

* This Essay was reprinted in the *Journal of Anatomy and Physiology*, vol. iii. p. 147, Nov. 1868, together with selections from letters written between the years 1807 and 1821 to his brother, Professor GEORGE JOSEPH BELL, who lived in succession in Nos. 9 and 23 George Street.

† Sir CHARLES BELL summarised his work up to this period in a volume entitled *An Exposition of the Natural System of the Nerves of the Human Body*: London, 1824.

‡ *Transactions*, vol. xiv., 1840.

about which rotation takes place and the rate of the rotation, can be deduced. Two Memoirs were contributed by WILLIAM RUTHERFORD; in one, he investigated the influence of the Vagus on the vascular system, whilst the other consisted of an elaborate inquiry into the action of drugs on the secretion of Bile. Lord LISTER, in the course of his researches into the germ theory of putrefaction and other fermentative changes, published an important essay on the Natural History of *Torulæ* and Bacteria.

The establishment of physiological and pathological laboratories in the Universities, as well as in connection with the Royal Colleges of Physicians and Surgeons of Edinburgh, and other institutions, has given increased opportunities for systematic research in these branches of biological science. The number of investigators has increased, and they have been enabled to conduct inquiries and to prepare Memoirs on the nervous, vascular, digestive, and reproductive systems, which have been published by the Society.

The scheme for the encouragement of research, recently inaugurated by the CARNEGIE TRUSTEES, by the institution of Fellowships and Scholarships, has made a provision to aid in the maintenance of men of science of the younger generation during their years of probation. The conferring of grants of money to meet the expenses of research and publication has rendered valuable assistance to scientific and other investigators, and has enabled our Society to provide more complete and finished illustrations to some of the Memoirs than would otherwise have been possible.

Those of us who commenced scientific work fifty or more years ago cannot but recognise the enormous advance which has been effected in recent years in providing means and facilities for exact inquiry. Natural objects were present and visible to our predecessors, as they now are to us. But the present methods of study are more exact, and opportunities for its pursuit are more easily obtained; instruments of research have become more powerful and more capable of assisting in penetrating deeper into the secrets of nature; novel phenomena have been disclosed to view and call for interpretation by men of science. The field of research is far from being barren and exhausted, for it is and will continue to be capable of producing ever-ripening fruit. It will be for the younger Fellows, and for those who may succeed them, to bear their share in the extension of natural knowledge, to undertake the responsibility of continuing the work of the Society, and to preserve the place which it has gained in the forefront of kindred institutions.

LIST OF PORTRAITS AND BUSTS IN THE POSSESSION
OF THE SOCIETY.

OIL PAINTINGS.

	<i>Painted by</i>	
BREWSTER, Sir DAVID, <i>P.R.S.E.</i>	NORMAN MACBETH, R.S.A.	Ordered by the Society in 1868.
BRISBANE, Sir THOMAS MAKDOUGALL, Bart., <i>P.R.S.E.</i>	Sir JOHN WATSON GORDON, <i>P.R.S.A.</i>	Subscribed for by Fellows of the Society in 1848.
BUCCLEUCH, HENRY, Duke of, first <i>P.R.S.E.</i>	The same.	Presented by the Duke of Buccleuch in 1840.
CHRISTISON, Sir ROBERT, Bart., <i>P.R.S.E.</i>	Sir GEORGE REID, <i>P.R.S.A.</i>	Ordered by the Society in 1875.
DAVY, Sir HUMPHRY, Bart., <i>P.R.S.L.</i>	Said to have been painted by JAMES LONSDALE, R.A.	Purchased by the Society in 1849.
FORBES, Professor JAMES DAVID, Sec. R.S.E.	Sir JOHN WATSON GORDON, <i>P.R.S.A.</i>	Ordered by the Society in 1860.
HALL, Sir JAMES, Bart., <i>P.R.S.E.</i> , F.R.S.	The same.	Presented by JOHN HALL, Esq., 1829.
MURDOCK, Wm., Inventor of Coal Gas Lighting.	J. GRAHAM, London.	Presented by the Edin- burgh Gas Light Co. in 1828.
NEILL, PATRICK, LL.D., F.R.S.E.	JOHN SYME. Engraved by E. M. HODGETTS.	Bequeathed by Miss ANNA NEILL in 1869.
ROBISON, Professor JOHN, Sec. R.S.E.	Sir HENRY RAEBURN.	Presented by Sir JOHN ROBISON in 1828.
SCOTT, Sir WALTER, Bart., <i>P.R.S.E.</i>	J. GRAHAM-GILBERT.	Ordered by the Society in 1828.
TAIT, Professor P. G., Sec. R.S.E.	Sir GEORGE REID, <i>P.R.S.A.</i>	Presented by a Com- mittee of Subscribers in 1892.
SMYTH, Professor C. PIAZZI, Astro- nomer Royal for Scotland.	JOHN FAED, R.S.A.	Bequeathed by Pro- fessor SMYTH, 1900.
WATT, JAMES, F.R.SS. L. & E.		Presented by Mr WATT of Aston Hall in 1829.



ROYAL INSTITUTION, EDINBURGH. NORTH VESTIBULE—SHOWING ENTRANCE TO
THE ROYAL SOCIETY'S APARTMENTS.

BUSTS.

BERZELIUS, JONS JAKOB.	Plaster Bust by F. TIECK, 1822.	...	...
CUVIER, GEORGES.	Plaster Bust by DAVID D'ANGERS.	...	...
GORDON, JAMES, Librarian R.S.E.	Original Plaster Bust by D. W. STEVENSON, R.S.A.	Bequeathed by Mr GORDON in 1904.	
MURCHISON, Sir RODERICK, Bart., K.C.B., F.R.S.	Marble Bust by HENRY WEEKES, R.A.	Presented by Sir RODERICK MURCHISON in 1871.	
PLAYFAIR, Professor JOHN.	Plaster Bust by Sir FRANCIS CHANTREY.	...	...
SINCLAIR, Sir JOHN, Bart. of Ulbster.	Plaster Statuette.	...	...
MONCREIFF, Rev. Sir HENRY WELLWOOD, Bart., of Tulliebole, D.D.	Plaster Bust by SAMUEL JOSEPH, R.S.A.	...	...

PRINTS.

BANKS, Right Hon. Sir JOSEPH, Bart., G.C.B., P.R.S.L.	Engraved by F. COUSINS.	...	...
GRIFFITH, Sir RICHARD, Bart., of Pencraig, Hon. F.R.S.E.	Photograph.	...	...
MACKENZIE, HENRY, F.R.S.E.	Engraved by H. RHODES, after A. GEDDES, 1822.	...	...
MONCREIFF, Right Hon. JAS., M.P., Lord Advocate (Lord Moncreiff).	Engraved by F. SCHENCK, after OTTO LEYDE.	...	...
MILNE-HOME, DAVID, V.P.R.S.E.	Lithograph.	...	...
ROBERTSON, Principal WM., D.D.	Engraved by J. DIXON after Sir JOS. REYNOLDS.	..	...

MISCELLANEOUS.

Group of Fellows of the R.S.E. 1901-1902. Photogravure by Messrs BARCLAY Bros. Presented by Messrs BARCLAY Bros.

Pen and Ink Sketch of the Manor House of Woolsthorpe, the birthplace and property of Sir ISAAC NEWTON.

Pen and Ink Sketch of the room in which Sir ISAAC NEWTON was born 25th December 1642.



KEITH PRIZE.

This Prize was instituted by ALEXANDER KEITH of Dunottar. In a letter, dated 18th December 1820, from Mr KEITH's Trustees to SIR WALTER SCOTT, President, it is announced that the sum of £600 is offered to the President and Council, "the principal of which shall on no account be encroached upon, while the interest shall form a Biennial Prize for the most important discoveries in Science made in any part of the world, but communicated by their author to the Royal Society, and published for the first time in their *Transactions*." In consequence of certain communications which took place between Mr KEITH's Trustees and the Council in 1833, the former, in a letter addressed to the President and Council, directed "that if, during any biennial period, no discovery of sufficient importance be communicated to the Society, in that case the Council shall adjudge the Prize to the author of the best communication on a *scientific subject* which shall have been read in the Society during that period."

The Prize consists of a Gold Medal and from £40 to £50 in money, and is awarded biennially.



MAKDOUGALL-BRISBANE PRIZE.

In May 1855, Sir THOMAS MAKDOUGALL-BRISBANE, Bart., announced his intention of founding this Prize in a letter addressed to the Council in the following terms :—

“ Feeling as I do a great debt of gratitude to the Royal Society of Edinburgh for the honour conferred upon me by electing me as their President, and for the kindness evinced towards me during the twenty-two years I have held that distinguished office, I am desirous to mark my sense of the obligations thus laid upon me in such a manner as to connect my name with the Society in an object tending to the promotion and advancement of Science. I therefore propose to make over to the Royal Society the sum of £400, for the purpose of producing a Biennial Prize of £30, to be awarded by the Council to such person, for such purposes, for such objects, and in such manner as shall appear to them to be most conducive to the promotion of the interests of Science. I am unwilling to lay down any special or precise rules in regard to the awarding of this Prize, as I have complete confidence in the Council on this head, but I may just mention a few points for their consideration.

“ (1) That the Prize when awarded may be either wholly in money or partly in a gold medal and the balance in money, but in no case to exceed £30; and if any surplus arises, it is to be laid aside to meet any deficiency arising from a diminution in the rate of interest in one or more years.

“ (2) That the Prize shall be awarded in alternate years with the KEITH Prize, but there will be no objection, in cases of extraordinary merit, that both Prizes may be awarded to the same individual.

“ (3) That the Council shall not be compelled to award the Prize unless there shall be some individual engaged in scientific pursuits, or some paper written on a scientific subject, or some discovery in science made during the biennial period, of sufficient merit or importance, in the opinion of the Council, to be entitled to the Prize. If in any biennial period the Prize shall not be awarded, the sum of £30 shall be either added to the capital or applied to increase future Biennial Prizes. But while I thus suggest these points, I leave them, and the whole matters relative to the Prize, solely and entirely to the judgment and discretion of the Council.”

The Prize consists of a Gold Medal and a sum of money, and is awarded biennially.



NEILL PRIZE.

In November 1851, it was announced to the Council that by the will of PATRICK NEILL, LL.D., the sum of £500 had been bequeathed to the Society for the purpose of "the interest thereof being applied in furnishing a Medal or other reward every second or third year to any distinguished Scottish Naturalist, according as such Medal or reward shall be voted by the Council of the said Society."

The Prize, consisting of a Gold Medal and a sum of money, is given for a paper of distinguished merit on a subject of Natural History, by a Scottish Naturalist, which shall have been presented to the Society during the period; or failing presentation of a paper sufficiently meritorious, may be awarded for a work or publication by some distinguished Scottish Naturalist on some branch of Natural History, bearing date within five years of the time of award.

According to the Council, the term "Scottish Naturalist" means a Naturalist residing and carrying on his investigations in any department of Natural Science in Scotland, and not necessarily, therefore, one of Scottish birth and parentage.

GUNNING VICTORIA JUBILEE PRIZE.

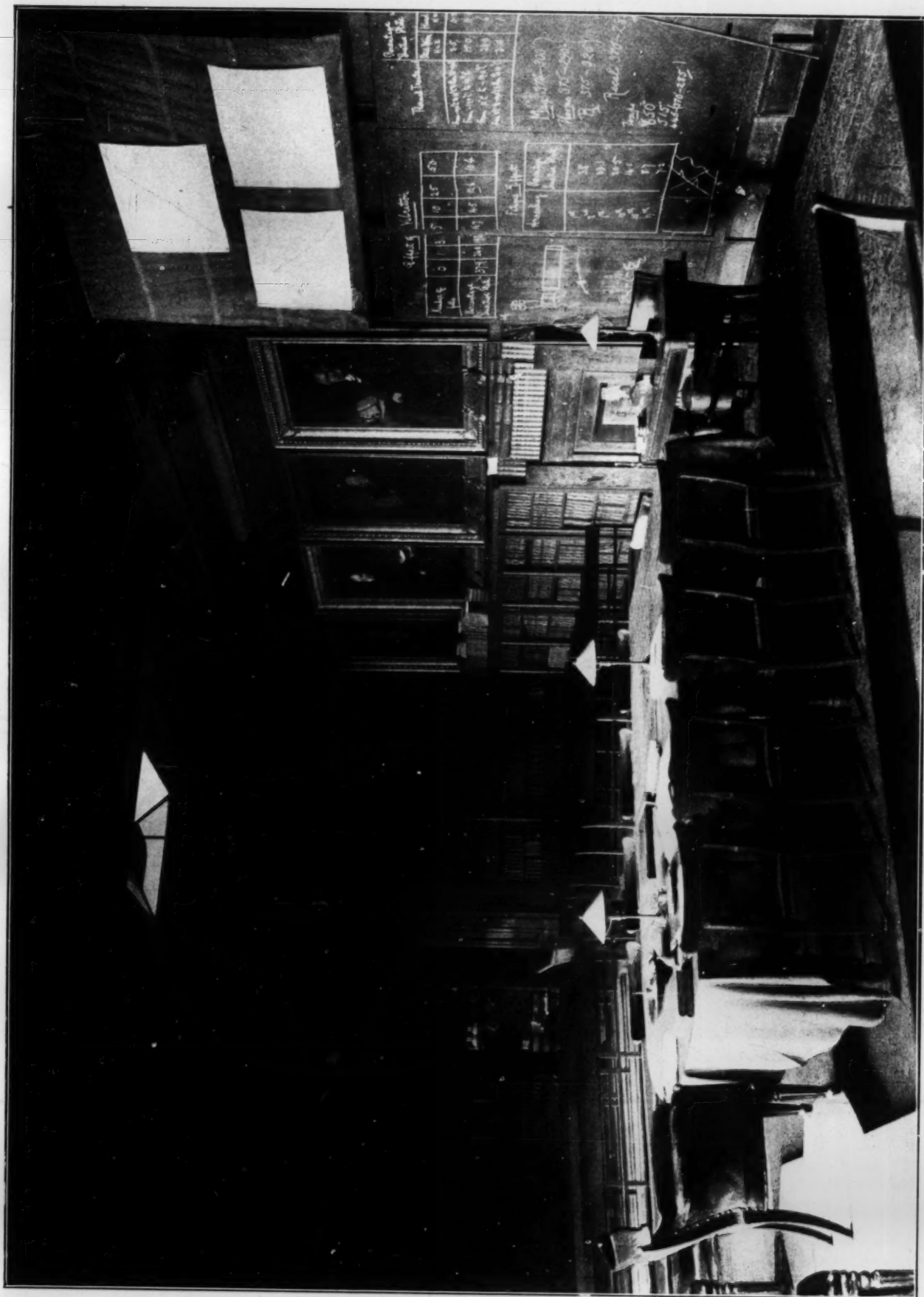
This Prize, founded in the year 1887 by Dr R. H. GUNNING, and consisting of the interest of £1000, was awarded triennially up to the year 1893. Since that time the Prize has been awarded quadrennially.

The Prize is awarded by the Council in recognition of original work in Physics, Chemistry, or Pure or Applied Mathematics.

Evidence of such work may be afforded either by a paper presented to the Society, or by a paper on one of the above subjects, or some discovery in them elsewhere communicated or made, which the Council may consider to be deserving of the Prize.

The Prize is open to men of science resident in or connected with Scotland. The first award was made in the year 1887.

In accordance with the wish of the Donor, the Council of the Society may on fit occasions award the prize for work of a definite kind to be undertaken during the three succeeding years by a scientific man of recognised ability.



ROYAL SOCIETY'S APARTMENTS, ROYAL INSTITUTION, EDINBURGH. LECTURE-ROOM, LOOKING NORTHWARD.

PRESIDENTS.

- 1783-1812. His Grace the Duke of BUCCLEUCH.
 1812-1820. Sir JAMES HALL, Bart., F.R.S.
 1820-1832. Sir WALTER SCOTT, Bart.
 1832-1860. Sir THOMAS MAKDOUGALL-BRISBANE, Bart., G.C.B., G.C.H.
 1860-1864. His Grace the Duke of ARGYLL, K.G., K.T., D.C.L., LL.D., F.R.S.
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 1869-1873. Sir ROBERT CHRISTISON, Bart., M.D., D.C.L.
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 1878-1879. Rev. PHILIP KELLAND, M.A., F.R.S.
 1879-1884. The Rt. Hon. Lord MONCREIFF of Tullibole, LL.D.
 1884-1885. THOMAS STEVENSON, Memb. Inst. C.E.
 1886-1890. Sir WM. THOMSON, LL.D., D.C.L., F.R.S. (Lord KELVIN).
 1890-1895. Sir DOUGLAS MACLAGAN, M.D., LL.D.
 1895-1907. The Rt. Hon. Lord KELVIN, G.C.V.O., LL.D., D.C.L., F.R.S., &c.
 1908- . Principal Sir WM. TURNER, K.C.B., D.C.L., LL.D., D.Sc., F.R.S.

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 1798-1819. Professor JOHN PLAYFAIR.
 1819-1828. Sir DAVID BREWSTER.
 1828-1839. Sir JOHN ROBISON.
 1840-1860. Professor JAMES DAVID FORBES.
 1860-1879. Professor JOHN HUTTON BALFOUR.
 1879-1901. Professor P. G. TAIT.
 1901- . Professor G. CHRYSTAL.

SECRETARIES OF CLASSES.

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1783-1789. Dr JAMES GREGORY.	1783-1803. Mr ALEXANDER FRASER
1783-1800. Dr JOHN WALKER.	TYTLER.
1789-1796. Professor JOHN PLAYFAIR.	1783-1805. Mr ANDREW DALZIEL.
1798-1805. Dr HOPE.	1803-1805. Rev. ARCHIBALD ALISON.
1800-1804. Dr KENNEDY.	1812-1819. Mr THOMAS THOMSON.
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HOPE.	1823-1827. Mr P. FRASER TYTLER.
1819-1823. Professor ALEX. IRVING.	
1823-1827. Mr (Sir) JOHN ROBISON.	

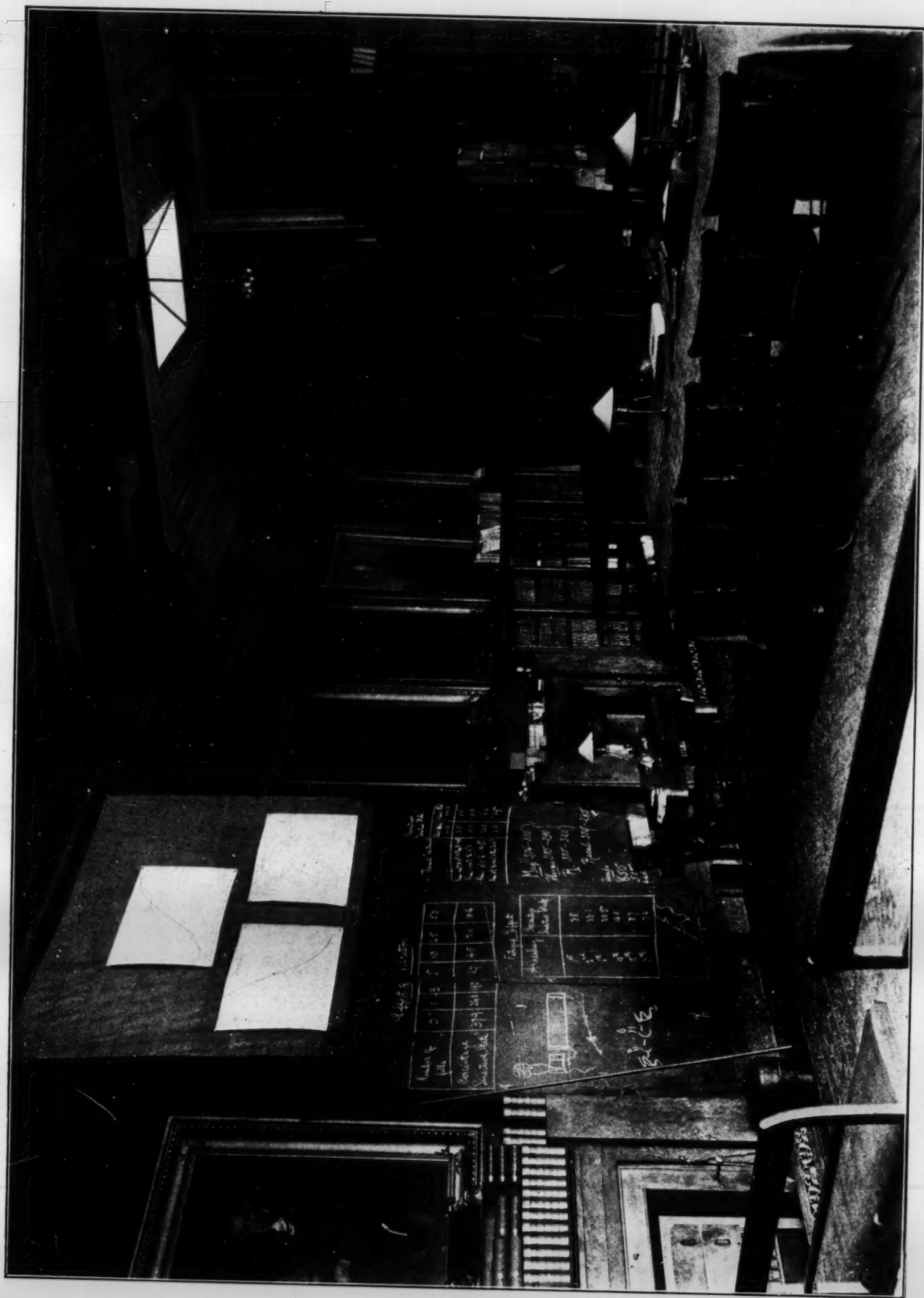
(In 1828 the office of *Secretaries to the Classes* was abolished. For continuation see *Secretaries to Ordinary Meetings*.)

SECRETARIES TO ORDINARY MEETINGS.

- 1828-1829. Mr P. FRASER TYTLER.
1828-1830. Rev. E. B. RAMSAY, B.A.
1829-1832. Dr J. C. GREGORY.
1830-1842. Dr (Sir) ROBERT CHRISTISON.
1832-1839. Professor J. D. FORBES.
1840-1847. DAVID MILNE (-HOME).
1843-1844. Professor KELLAND.
1844-1856. Professor WM. GREGORY.
1848-1854. Professor C. PIAZZI SMYTH.
1854-1859. Professor J. H. BALFOUR.
1859. Professor WILLIAM SWAN.
1859-1864. Dr LYON PLAYFAIR (Lord PLAYFAIR).
1860-1869. Professor GEO. JAMES ALLMAN.
1864-1879. Professor P. G. TAIT.
1869-1891. Professor Sir WM. TURNER.
1879-1905. Professor A. CRUM BROWN.
1891-1900. Sir JOHN MURRAY.
1900-1904. Dr R. H. TRAQUAIR.
1904-1909. Professor D. J. CUNNINGHAM.
1905- . Dr C. G. KNOTT.
1909- . Dr R. KIDSTON.

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1834-1836. Mr GEORGE FORBES.
1836-1839. Mr CHARLES FORBES.
1839-1857. Mr JOHN RUSSELL.
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1863-1880. Mr DAVID SMITH.
1880-1893. Mr A. GILLIES SMITH.
1894-1906. Mr PHILIP R. D. MACLAGAN.
1906- . Mr JAMES CURRIE.



ROYAL SOCIETY'S APARTMENTS, ROYAL INSTITUTION, EDINBURGH. LECTURE-ROOM, LOOKING SOUTHWARD.

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1812-1819. Mr THOMAS ALLAN.
1820-1833. Mr JAMES SKENE.
1834-1854. Dr THOS. S. TRAILL.
1856-1878. Dr (Sir) DOUGLAS MACLAGAN.
1878-1906. Dr ALEXANDER BUCHAN.
1906- . Dr J. SUTHERLAND BLACK.

ASSISTANT KEEPERS OF MUSEUM.

1829-1849. Mr JOHN STARK.
1850-1855. Mr JAMES WILSON.



BUST OF JAMES GORDON, LIBRARIAN, R.S.E.
1876 TO 1902.

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